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EMO

Special Edition

Views on Anti-Ballistic Missile Defence

The Debate on the Anti-Ballistic Missile
McNamara on BMD
A Czech View of the Arms Race
A Case for BMD
The Brink of another Arms Race
Editorial Comments

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Director General: C. R. PATTERSON *Editor:* A. M. STIRTON

ROGER DUHAMEL, F.R.S.C.
QUEEN'S PRINTER AND CONTROLLER OF STATIONERY
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THE DEBATE ON THE ANTI-BALLISTIC MISSILE

This issue of the EMO Digest reproduces a number of selected papers and articles dealing with various aspects of the problem of using missiles to defend ourselves against missiles. It is a problem which is bound to be of increasing interest and concern to Canadians if the USA goes ahead with any major program of defensive missile deployment.

A few basic facts have already emerged from the preliminary considerations of the problem:

(*a*) *Defence science and technology has now reached the stage where it is possible to intercept and destroy ICBM's of the present types.*

(*b*) *A defensive missile system would result in an overall reduction of the damaging effects of a general attack by missile borne nuclear weapons.*

(*c*) *A meaningful defensive missile system would carry a frighteningly high price tag for initial cost and subsequent maintenance.*

(*d*) *Any particular scale of defensive missile deployment could be overwhelmed at a particular location if an attacker chose to concentrate his attack.*

There are probably other basic facts which will emerge and which should be appreciated by the tax-paying owners of any future missile defences. Unfortunately what is sometimes presented as fact is in reality fancy. The casual reader should not be prepared to accept everything which appears in print. As the debate progresses, this journal will attempt to separate fact from fancy and in this issue a misconception regarding the possible fallout hazard from defensive missile war heads is drawn to your attention.

Some Canadians may claim disinterest because their homes are remote from any threatened area. But their wallets or bank accounts are not nearly so remote if it is decided to "buy in" on a broad system. ▲

BURKE STANNARD,
(*Scientific Adviser*),
Canada EMO.

June 21, 1967

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McNAMARA ON BMD

The following is an extract from Mr. McNamara's Statement to the relevant Senate Committee on the American defence budget for 1967-68, presented on January 23, 1967. It explains his position on the deployment of BMD. The extract starts half-way through the second section, "Strategic Forces".

B. The Size and Character of the Threat

Soviet Strategic Offensive-Defence Forces

. . . We have been aware for many years that the Soviets have been working on an anti-ballistic missile defence system, just as we have been. After a series of abortive starts, it now appears that the Soviets are deploying such a system (using the Galosh missile, publicly displayed in 1964) around Moscow. They are also deploying another type of defensive system elsewhere in the Soviet Union, but the weight of the evidence at this time suggests that this system is not intended primarily for anti-ballistic missile defence. However, knowing what we do about past Soviet predilections for defence systems[1], we must, for the time being, plan our forces on the assumption that they will have deployed some sort of an ABM system around their major cities by the early 1970's. Whether made up of Galosh only, or a combination of Galosh and other types of missiles, a full-scale deployment would cost the Soviet Union at least $20 to $25 billion.

The Red Chinese Nuclear Threat

There has been no basic change in our estimates of the Red Chinese nuclear threat. Their firing of a nuclear armed missile over a distance of a few hundred miles last October falls within the limits of that estimate. They will require many more tests before they achieve a truly operational capability with a medium- or intermediate-range missile, and this will take time.

With regard to an ICBM, we believe that the Red Chinese nuclear weapons and ballistic missile development programs are being pursued with high priority. On the basis of recent evidence, it appears possible that they may conduct either a space or a long-range ballistic missile launching before the end of 1967. However, it appears unlikely that the Chinese could deploy a significant number of operational ICBMs before the mid-1970's, or that those ICBMs would have great reliability, speed of response, or substantial protection against attack.

Red China also has some bombers which could carry nuclear weapons, but most of them have an operational radius of only a few hundred miles. It is highly unlikely, on the basis of cost alone, that they would undertake the development, production, and deployment of a new, long-range bomber force. If they chose to do so, it would take them a decade or more before they could deploy it. Accordingly, we have no reason on this account to change our estimate that a significant Red Chinese nuclear threat to the continental United States will not develop before the mid-1970's.

C. Capabilities of the proposed forces for assured destruction

The most demanding test of our Assured Destruction capacity is the ability of our strategic offensive forces to survive a well co-ordinated surprise Soviet first strike directed against them. Because no one can know how a general nuclear war between the United States and the Soviet Union might occur, prudence dictates that we design our own strategic forces on the basis of a greater threat than we actually expect.

[1] The Soviets for more than a decade have spent substantially more on air defence against strategic bombers than has the U.S. But, if our Strategic Air Command is correct in its judgment that a very high proportion of the U.S. incoming bombers could penetrate the Soviet defences and reach their targets, and I have no reason to dispute it, then we must conclude that the bulk of these Soviet expenditures has been wasted.

Capability against the Expected Threat

Even if the Soviets in the 1972 period were to assign their entire available missile force to attacks on our strategic forces (reserving only refire missile and bomber-delivered weapons for urban targets), more than one-half of the total forces programmed last year for 1972 would still survive and remain effective.

Considering the overall size and character of that force, it is clear that our strategic missiles alone could destroy the Soviet Union as a viable 20th-Century Society, even after absorbing a well co-ordinated, surprise first attack. Indeed, the detonation of even one-

fifth of the total surviving weapons over Soviet cities would kill about 30 per cent of the total population (73 million people) and destroy about one-half of the industrial capacity. By doubling the number of warheads delivered, Soviet fatalities and industrial capacity destroyed would be increased by considerably less than one-third. Beyond this point, further increments of warheads delivered would not appreciably change the result, because we would have to bring smaller and smaller cities under attack, each requiring one delivered warhead.

Although it is not all certain that they will do so, we must, as I noted earlier, base our force planning on the assumption that the Soviets will deploy a reasonably effective ABM defence around their principal cities, and we must be prepared to overwhelm it.

We have been hedging against this possibility for some time, and last year we took a number of actions of which the following are the most important: (1) accelerated development of the Poseidon missile; (2) approved production and deployment of Minuteman III; (3) developed penetration aids for Minuteman.

Now, in the FY 1968 program, we propose to take a number of additional actions to enhance the future capabilities of our Assured Destruction forces, of which the following are the more important: (1) produce and deploy the Poseidon missile; (2) produce and deploy improved missile penetration aids; (3) increase the proportion of Minuteman III in the planned force and provide it with an improved third stage; (4) initiate the development of new re-entry vehicles, specifically designed for use against targets heavily defended with ABMs.

The net effect of these actions would be to increase greatly the overall effectiveness of our Assured Destruction force against the Soviet Union by mid-1972. Even if the Moscow-type ABM defence were deployed at other cities as well, the proposed U.S. missile force alone could inflict about 35 per cent (86 million) fatalities on the Soviet Union in 1972—after absorbing a surprise attack.

As I noted earlier, a relatively small number of warheads detonated over 50 cities would destroy half of Red China's urban population and more than one-half of her industry.

Thus, the strategic missile forces proposed for the FY 1968-72 period would, by themselves, give us an Assured Destruction capability against both the Soviet Union and Red China, simultaneously.

Capability against "Higher than Expected Threats"

As I indicated last year, our Assured Destruction capability is of such crucial importance to our security that we must be prepared to cope with Soviet strategic threats which are greater than those projected in the latest intelligence estimates.

The most severe threat we must consider in planning our Assured Destruction forces is an extensive, effective Soviet ABM deployment combined with a deployment of a substantial ICBM force with a hard-target kill capability. Such a Soviet offensive force might pose a threat to our Minuteman missiles. An extensive, effective Soviet ABM system might then be able to intercept and destroy a significant portion of our residual missile warheads, including those carried by submarine-launched missiles. (The Soviet offensive and defensive threats assumed here are both substantially higher than expected.)

To hedge against the possibility of such a threat to our land-based missile forces, we have authorized the development and production of the Poseidon. Should still additional offensive power be required, and such a requirement is not now clear, we are considering the development and deployment of a new Advanced ICBM, designed to reduce vulnerability to such a Soviet threat. The deployment of the Nike-X as a defence for our Minuteman force would offer a partial substitute for the possible further expansion of our offensive forces.

But again I want to emphasize that we don't know whether the Soviet Union will develop and deploy the kind of forces assumed here. Even against this higher-than-expected threat, and even without a Nike-X defence of Minuteman, our proposed strategic missile and bomber forces could still inflict 40 per cent or more fatalities on the Soviet population throughout the time period involved.

More extreme threats are highly unlikely. In any event, the changes we are now proposing in our strategic offensive forces would make it dangerous and expensive for the Soviet Union to move in the direction of more extreme threats to our Assured Destruction capability. If we assume, as I believe we should, that the Soviets would want to reduce the vulnerability of their own offensive forces against the possibility of a first strike by our very accurate forces in the FY 1972-73 period, they must further disperse and harden their strategic missiles, which is exactly what they appear to be doing now. To do so is expensive and for the same budget outlay results in reduced missile payloads. Not to do so would leave the Soviet force highly vulnerable. Thus, we can, in planning our forces, foreclose any seemingly "easy" and "cheap" paths to their achievement of a satisfactory Assured Destruction capability and a satisfactory Damage Limiting capability at the same time.

We, of course, cannot preclude the possibility that the Soviet Union may increase its strategic forces budget at some time in the future. That is why we are now undertaking a very comprehensive study of a new strategic missile system. And that is why we are not precluding the possible future construction of new Poseidon submarines or the defence of our presently deployed Minuteman silos with Nike-X. While I believe

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we should place ourselves in a position to move forward promptly on all of these options if later that should become necessary, we need not commit ourselves to them now.

D. Capabilities of the proposed forces for damage limitation

The principal issue in this area of the Strategic Forces Program concerns the deployment of an anti-ballistic missile defence system, i.e., Nike-X. There are three somewhat overlapping but distinct major purposes for which we might want to deploy such a system at this time: (1) to protect our cities (and their population and industry) against a Soviet missile attack; (2) to protect our cities against a Red Chinese missile attack in the mid-1970's; (3) to help protect our land-based strategic offensive forces (i.e., Minuteman) against a Soviet missile attack.

After studying the subject exhaustively, and after hearing the views of our principal military and civilian advisers, we have concluded that we should not initiate an ABM deployment at this time for any of these purposes. We believe that:

The Soviet Union would be forced to react to a U.S. ABM deployment by increasing its offensive nuclear force still further with the result that: (a) the risk of a Soviet nuclear attack on the U.S. would not be further decreased; (b) the damage to the U.S. from a Soviet nuclear attack, in the event deterrence failed, would not be reduced in any meaningful sense.

As I noted earlier, the foundation of our security is the deterrence of a Soviet nuclear attack. We believe such an attack can be prevented if it is understood by the Soviets that we possess strategic nuclear forces so powerful as to be capable of absorbing a Soviet first strike and surviving with sufficient strength to impose unacceptable damage on them. We have such power today. We must maintain it in the future, adjusting our forces to offset actual or potential changes in theirs.

There is nothing we have seen in either our own or the Soviet Union's technology which would lead us to believe we cannot do this. From the beginning of the Nike-Zeus project in 1955 through the end of this current fiscal year, we will have invested a total of about $4 billion on ballistic missile defence research —including Nike-Zeus, Nike-X and Project Defender. And, during the last five or six years, we have spent about $1.2 billion on the development of penetration aids to help ensure that our missiles could penetrate the enemy's defences. As a result of these efforts, we have the technology already in hand to counter any offensive or defensive force changes the Soviet Union might undertake in the foreseeable future.

We believe the Soviet Union has essentially the same requirement for a deterrent or "Assured Destruction" force as the U.S. Therefore, deployment by the U.S. of an ABM defence which would degrade the destruction capability of the Soviet's offensive force to an unacceptable level would lead to expansion of that force. This would leave us no better off than we were before.

With respect to protection of the U.S. against a possible Red Chinese nuclear attack, the lead time required for China to develop a significant ICBM force is greater than that required for deployment of our defence—therefore, the Chinese threat in itself would not dictate the production of an ABM system at this time.

Similarly, although the protection of our land-based strategic offensive forces against the kind of heavy, sophisticated missile attack the Soviets may be able to mount in the mid—or late 1970's might later prove to be worthwhile, it is not yet necessary to produce and deploy the Nike-X for the purpose.

I have already discussed, in connection with my review of the capabilities of our strategic forces for Assured Destruction the third major purpose for which we may want to deploy an ABM defence (i.e., the protection of Minuteman). Now, I would like to discuss the other two purposes.

Deployment of Nike-X for Defence of our Cities Against a Soviet Attack

What is involved here is an analysis of the contribution the Nike-X system might make to the defence of our cities under two assumptions: (1) that the Soviets do NOT react to such a deployment; (2) that the Soviets do react in an attempt to preserve their "Assured Destruction" capability.

As you know, the major elements of the Nike-X system are being developed in such a way as to permit a variety of deployments; two have been selected for the purposes of this analysis. The first, which I will call "Posture A", represents a light U.S. defence against a Soviet missile attack on our cities. It consists of an area defence of the entire continental United States, providing redundant (overlapping) coverage of key target areas; and, in addition, a relatively low-density Sprint defence of a number of the largest cities to provide some protection against those warheads which get through the area defence. The second deployment, which I call "Posture B", is a heavier defence against a Soviet attack. With the same area coverage, it provides a higher-density Sprint defence for twice the number of cities.

Shown in the following tabulation are the components and costs (which, if past experience is any guide,

may be understated by 50 to 100 per cent for the system as a whole[2]) of Posture A and Posture B.

	Posture A invest. cost ($ billion)	Posture B invest. cost ($ billion)
RADARS		
MAR		
TACMAR		
PAR		
MSR		
Invest. cost	6.5	12.6
MISSILES		
Spartan		
Sprint		
Invest. cost	2.4	4.8
DOD invest. cost	8.9	17.4
AEC invest. cost	1.0	2.0
Total invest. cost (ex. R & D)	9.0	19.4
Annual operating cost	0.38	0.72
No. of cities w/term. def:	X	2X

The Multi-function Array Radar (MAR) is a very powerful phased-array radar which can perform all the defence functions involved in engaging a large, sophisticated attack: central control and battle management, long-range search, acquisition of the target, discrimination of warheads from decoys or "spoofing" devices, precision tracking of the target, and control of the defence interceptor missiles.

The TAGMAR Radar is a scaled down, slightly less complex and less powerful version of the MAR, which can perform all the basic defence functions in a smaller, less sophisticated attack.

The Perimeter Acquisition Radar (PAR) is a phased-array radar required for the very long-range search and acquisition functions involved in area defence. To achieve the full potential of the extended range Spartan, the target must be picked up at much greater distances in order to compute its trajectory before the Spartan is fired.

The Missile Site Radar (MSR) is a much smaller, phased-array radar needed to control the Sprint and Spartan interceptor missiles during an engagement. It can also perform the functions of the TACMAR but on a considerably reduced scale. Actually, a number of different sizes are being studied. This "modular" approach will permit us to tailor the capacity of the radar to the particular needs of each defended area.

[2] Even before the systems became operational, pressures would mount for their expansion at a cost of still additional billions. The unprotected, or relatively unprotected, areas of the U.S. would claim that their tax dollars were being diverted to protect New York and Washington while they were left naked. And, critics would point out that our strategic offensive force is premised on a much larger Soviet threat (the "possible", not the "probable" threat); they would conclude that the same principles should be applied to our strategic defensive forces. For these and other reasons, I believe that, once started, an ABM system deployed with the objective of protecting the United States against the Soviet Union would require an expenditure on the order of $40 billion over a 10-year period.

The Spartan is a three-stage missile with a nuclear warhead capable of intercepting incoming objects at relatively long range above the atmosphere. The Sprint is a shorter-range, high-acceleration interceptor missile designed to make intercepts at lower altitudes. . .

Testing of the Sprint missile was started at White Sands in November, 1965 and the tempo of testing will steadily increase during the current year. The Spartan is still on the drawing boards. It represents a very substantial redesign of the original Zeus and we will not know until it is flight-tested how well it will perform.

Facilities for testing both the Sprint and the Spartan will be constructed on Kwajalein Atall. These, together with the TACMAR and MSR and the programs for the computers, will give us all of the major elements of the Nike-X system which are essential to test its overall performance against re-entry vehicles fired from Vandenberg Air Force Base in California. . . The system will be tested in stages, starting with the MSR and Sprint, then the Spartan missile and the TACMAR radar. A large number of test shots will be launched from the west coast of the United States to Kwajalein to test the system thoroughly as a whole. The most important objective of this effort is to determine proper system integration and computer programming, since the individual components of the system will have already been tested.

But even after this elaborate test program is completed, some technical uncertainties will still remain unresolved; this is to be expected in a system designed for such a highly complex mission. Moreover, we have learned from bitter experience that even when the development problems have been solved, a system can run into trouble in production or when it is put into operation. All too often the development prototype cannot be produced in quantity without extensive re-engineering. Production delays are encountered and costs begin to spiral. Sometimes these problems are not discovered until the new system actually enters the inventory and has to function in an operational environment.

In this connection, it is worth noting that had we produced and deployed the Nike-Zeus system proposed by the Army in 1959 at an estimated cost of $13 to $14 billion, most of it would have had to be torn out and replaced, almost before it became operational, by the new missiles and radars of the Nike-X system. By the same token, other technological developments in offensive forces over the next seven years may make obsolete or drastically degrade the Nike-X system as presently envisioned. We can predict with certainty that there will be substantial additional costs for updating any system we might consider installing at this time against the Soviet missile threat.

The deployment of a Nike-X system would also require some improvement in our defence against manned bomber attack in order to preclude the Soviets from undercutting the Nike-X defence; and we would want to expand and accelerate the fallout shelter pro-

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gram. The investment cost (including R & D) of the former is estimated at about $1.5 to $2.4 billion and would provide for a small force of F-III or F-12 type interceptors and airborne warning and control aircraft (AWACS). The expanded fallout shelter program would cost about $800 million more than the one we are now pursuing. We would also need some of our anti-submarine warfare forces for use against Soviet missile submarines, but we are not yet clear whether these ASW forces would actually have to be increased over the currently planned levels. In any event, the "current" estimates of the investment cost of the total Damage Limiting package would amount to at least $12.2 billion for Posture A and at least $21.7 billion for Posture B.

To test the contribution that each of these Nike-X deployments might make to our Damage Limiting objectives, we have projected both the U.S. and Soviet strategic nuclear forces (assuming no reaction by the Soviets to the U.S. ABM deployment) to the time when Posture B, the heavier defence, could be fully in place.

The fatalities which these Soviet forces could inflict upon the U.S. (with and without a U.S. ABM defence) and the fatalities which the U.S. forces could inflict on the Soviet Union (with a Soviet ABM defence) are shown in Table A at the foot of the page.

The first case, "Soviets strike first, U.S. retaliates", is the threat against which our strategic forces must be designed. The second case, "U.S. strikes first, Soviets retaliate", is the case that would determine the size and character of the Soviet reaction to changes in our strategic forces, if they wish, as clearly they do, to maintain an Assured Destruction capability against us.

These calculations indicate that without Nike-X and the other Damage Limiting program discussed earlier, U.S. fatalities from a Soviet first strike could total about 120 million; even after absorbing that attack, we could inflict on the Soviet Union more than 120 million fatalities. Assuming the Soviets do not react to our deployment of an ABM defence against them, which is a most unrealistic assumption, Posture A might reduce our fatalities to 40 million and Posture B to about 30 million.

Although the fatality estimates shown for both the Soviet Union and the U.S. reflect some variations in the performance of their respective ABM systems, they are still based on the assumption that these systems will work at relatively high levels of effectiveness. If these ABM systems do not perform as well as our technical people postulate, fatalities on both sides could be considerably higher than those shown in Table A, or the costs would be considerably higher if major improvements or additions had to be made in the systems to bring them up to the postulated level of performance.

If the Soviets are determined to maintain an Assured Destruction capability against us and they believe that our deployment of an ABM defence would reduce our fatalities in the "U.S. strikes first, Soviets retaliate" case to the levels shown in Table A, they would have no alternative but to increase the second-strike damage potential of their offensive forces. They could do so in several different ways. Shown below are the relative costs to the Soviet Union of reponding to a U.S. ABM deployment in one of these possible ways:

Level of U.S. fatalities which Soviets believe will provide deterrence[§]	Cost to Soviets of offsetting U.S. cost to deploy an ABM
40 million	$1 Sov. cost to $4 U.S. cost
60 million	$1 Sov. cost to $2 U.S. cost
90 million	$1 Sov. cost to $1 U.S. cost

If the Soviets choose to respond in that way to our ABM deployment, the results would be as shown in Table B below.

In short, the Soviets have it within their technical and economic capacity to offset any further Damage Limiting measures we might undertake, provided they are determined to maintain their deterrent against us. It is the virtual certainty that the Soviets will act to maintain their deterrent which casts such grave doubts on the advisability of our deploying the Nike-X system for the protection of our cities against the kind of heavy, sophisticated missile attack they could launch in the 1970's. In all probability, all we would accomplish would be to increase greatly both their defence expenditures and ours without any gain in real security to either side.

A. Number of Fatalities in an All-Out Strategic Exchange (in Millions)*

(Assumes no Soviet reaction to U.S. ABM deployment)

U.S. programs	Soviets strike first, U.S. retaliates		U.S. strikes first, Soviets retaliate**	
	U.S. fatalities	Soviet fatalities	U.S. fatalities	Soviet fatalities
Approved	120	120+	100	70
Posture A	40	120+	30	70
Posture B	30	120+	20	70

*The fatality figures represent deaths from blast and fallout; they do not include deaths resulting from fire-storms, disease, and general disruption of everyday life. The data in the table are highly sensitive to small changes in the pattern of attack and small changes in force levels.

**Assumes U.S. minimizes U.S. fatalities by maximizing effectiveness of strike on Soviet offensive systems.

[§]U.S. fatalities if U.S. strike first and Soviets retaliate.

(Continued on page 16)

A CZECH VIEW OF THE ARMS RACE

by
Oldrich Mahler

Editor's Note: This article is reprinted by kind permission of The Institute for Strategic Studies, London, England, who hold the copyright of the translation. This article, "McNamara on BMD", "The Brink of Another Arms Race", and "A Case for BMD" were published in the Institute's magazine "Survival", April, 1967.

The following is a translation of scattered extracts from "The Power Relationship and Western Strategy" (Pomer sil a strategie Zapadu, pub. Nase vojsko, Prague, 1966), reviewed in this issue.[1] The study represents a new departure, and a strikingly uninhibited freedom of comment, among East European contributions to the subject. (The same publishers last year issued a Czech translation of Herman Kohn's Thinking About the Unthinkable.) The author, Lt. Col. Oldrich Mahler, spent some years at Leningrad University. He is now on the staff of the Klement Gottwald Military Academy in Prague.

The "Massive Retaliation" Doctrine

In 1953-54, American strategists considered the "massive retaliation" concept to be quite realistic, even though . . . the outcome of the Korean War had given no great grounds for optimism. American strategy continued to be based primarly . . . on an assumed superiority in the number of atomic warheads and bombs, and on the favourable results of the final H-bomb tests. "Massive retaliation" was further based on an imagined superiority in strategic NDVs, especially on the strong strategic air force and its planned increase and improved ranges through refuelling in flight; on American command of the oceans; on U.S. leadership in the aggressive pacts and, not least, on the advantages of territorial exclusiveness and invulnerability . . . .

The proclamation of "massive retaliation" was at root merely declaratory; it was a threat intended to halt the decline of imperialist rule and prevent the further strengthening of the world socialist system . . . . It could only hope for success if the threat contained in it was credible. But the final phase of the Korean War had shown that the U.S. was incapable of a massive nuclear strike. So the "massive retaliation" strategy was simply a public declaration of something the U.S. hoped to achieve later on.

The credibility of the new strategy was put to a very early test, namely, on June 7, 1954 when the French strongpoint of Dien Bien Phu fell. . . The U.S. failed to launch any massive retaliation.

The Missile Gap

Around the end of the 1950's, the "missile gap", i.e., the Soviet lead in the production of missile systems, and other factors, such as the general strengthening of the socialist camp's defence potential, the economic growth of the socialist countries, Soviet successes in the exploration of the universe, the collapse of the colonial system and the declining cohesion of the Atlantic Pact, let to a tilting of the balance in favour of the socialist camp. Since the basic military equilibrium remained intact, this tilting enabled the socialist countries to wage their well-known peace offensive, which reached its zenith in 1961 with the April defeat of the American interventionists in the Bay of Pigs and the erection of the Berlin Wall.

The Dual Ability

The introduction of novel strategic methods of waging war, and their decisive effect on the course and outcome of an armed struggle, means that no state, however large or economically powerful, can be considered a military Great Power unless it possesses nuclear weapons. Indeed, at the present moment, it is not even correct to call all nuclear powers Great Powers. A nuclear Great Power must have a nuclear capability of a certain quality. This quality can be most simply defined as the dual ability to inflict a crushing nuclear blow and at the same time to survive nuclear attack by an opponent. The ability to destroy economic and political centres, to cripple the hinterland and to break the will to resist among an opponent's Armed Forces implies, above everything, possession of all kinds of nuclear warheads . . . and possession of all kinds of delivery vehicles. . . . At the same time, factors of quantity are no less significant than those of quality, both depending on the scientific and technological level of the country and on its industrial potential.

The ability to survive an enemy's nuclear blow depends on many factors, especially on the ability to deliver a counter-blow, . . . on the level of defences against air attack, . . . on the level of passive defence of the hinterland, determined by the dispersal of key strategic installations, construction of atom-proof shel-

[1] Listed in the "Books Received" section of the February issue of Survival as "The Balance of Forces and Western Strategy". The phrase "power relationship", thought clumsier, accurately renders the Czech; "balance" is used here to translate the narrower concept of equilibrium.

ters for the civil population, location of crucial industrial facilities underground, etc., and on the geostrategic factor, i.e., primarily, size of territory and concentration of economic and political centres.

If we consider the situation over the last decade in the light of this dual ability, we must conclude that there have been no nuclear Great Powers in the true sense at all. Neither of the two nuclear giants, the USSR and the USA, has had all the attributes of a nuclear Great Power. The ability to inflict a massive blow has not been balanced by the ability to survive an opponent's nuclear strike. A decision to use nuclear weapons against another country has been basically equivalent to a decision to commit suicide. This has, to an unprecedented degree, limited freedom of action and the ability to opt for warlike solutions. Nuclear missiles have become a means for deterring the use of force, rather than a means for using force. This, unfortunately, can change as soon as one side acquires the second part of the dual ability—as soon, that is, as it is able to survive an opponent's massive nuclear strike. But, on realistic assumptions, this state of affairs will not even be achieved by the beginning of the 1970's.

If the USA and the USSR are not nuclear Great Powers in the terms we have defined, this does not mean there is no difference between them and the other nuclear powers, let alone the non-nuclear ones. The fundamental difference is that the USSR and the USA have all the basic pre-conditions for becoming nuclear Great Powers, and are furthest on the road. Their nuclear missile capabilities would suffice not only for their mutual destruction, but for the destruction of the whole coalitions opposed to them too. The nuclear capabilities of the other nuclear powers can at most, in certain circumstances, injure an opponent. In contrast to the rest, the Soviet Union and United States cannot merely aspire to survive a massive nuclear strike, but are actively striving to acquire that ability. In this, as in other ways, the capacities of the other countries are very limited, and no particularly serious effort has yet been exerted in their cases.

The demands made on military potential by modern warfare are one reason why Great Britain, France and other capitalist countries are losing their former Great Power status.

Their ability to launch a nuclear attack is limited both by the number and quality of the methods available to them. . . . Their limited resources forbid them, for the forseeable future at any rate, to achieve . . . the ability to survive a massive nuclear assault. Their high vulnerability in the event of nuclear conflict, owing to their small territorial extent and great density of population, is a long-term if not a permanent characteristic.

Mutual Attrition by Nuclear Conflict

Nuclear weapons, particularly strategic missiles, facilitate rapid changes in the power balance. With present military technology tending towards a levelling out in both quality and numbers of NDVs, similar possibilities will be open to both sides. In other words, nuclear strikes will enable the attacking side to change the balance of power in its own favour to a degree incomparably greater of course—in view of the extent of damage done—than such changes in the past. But before the aggressor can exploit the superiority thus achieved, his opponent's retaliatory blow will probably have restored the balance. The struggle to alter the balance of power through nuclear war will lead to vast and irreparable losses. The balance will be changed permanently, through the destruction not merely of Armed Forces but of resources necessary for their renewal. . . . The speed of repeated nuclear blows will overtake the procurement of fresh forces. And so the restoration of the balance of power will take place at a continually descending level. Changes in the balance will proceed not by acquisition of strength on both sides but by a symmetrical attrition through crushing blows and physical annihilation. The decisive factors will be the ability to destroy the foe and the maintenance of this ability until he is unable to carry on fighting. . . . Given the enormous speed and destructiveness of contemporary weapons, a state of mutual exhaustion may be reached without any military decision.

The Cuban Crisis

The American intention to make a second attempt (after the Bay of Pigs) at the military liquidation of Cuba's revolutionary order was evident to the world at large. Revolutionary Cuba and the other socialist states carried out a number of measures to reinforce the defences of the island. . . . Fearing that the other side might underestimate the deterrent strength of the far-off Soviet ICBMs and provoke their use by attacking Cuba, the Soviet Government complied with the Cuban Government's request and deployed medium-range missiles on the island.

The distant threat of retaliation had become an immediate threat. No one in the USA remained under the illusion that nuclear missiles would not be used to defend the Cuban revolution. The deployment of missiles in Cuba accelerated the arrival, admittedly, of an already inevitable crisis; but, at the same time, it brought a different aim into the forefront of American policy—not the liquidation of the socialist order on Cuba, but the dismantling of the rockets.

The executive of the U.S. National Security Council . . . began to investigate the options for American policy . . . After long discussions, two alternatives were presented to Kennedy: either to start a blockade and carry on from there, or to start with an air strike which would in all probability lead to invasion. To begin with, the American President chose the lower level. . . . It was clear that a blockade was not the ultimate aim of American policy. . . . The biggest invasion force since World War II was gathering in Florida.

Thus, there began one of the most serious crises of the post-war world, threatening a direct confrontation

of the two world super-powers. The Soviet Union emerged successfully from this test, even though at the beginning of the crisis her actions showed a certain lack of conceptual clarity—there was a failure to use the Soviet missiles in Cuba at the outset of the crisis as a factor affording a certain diplomatic advantage—and even though, as a result, certain Soviet representatives committed considerable tactical errors. The incorrect actions of Soviet representatives injured the standing of Soviet foreign policy and led to a diplomatic defeat at the UN. But this could not disguise the fact that it was the U.S. Government which had started the new crisis. . . .

In its announcement of October 23 (the Soviet Government) . . . proclaimed that "no Soviet nuclear bomb will fall on the U.S. or on any other country, provided no aggression is undertaken". "But, if the aggressors unleash war, the USSR will execute a most powerful reprisal."

The reasonable yet firm statement by the Soviet Government left no one in the U.S. in doubt as to how the Soviet Union would act next. It cooled down a number of overheated American Congressmen and generals; and, in the last resort, it saved the world from thermo-nuclear catastrophe.

The course of the Caribbean crisis and the compromise settlement that ended it, confirmed the real relationship in the world—an equilibrium in the main military field, that of nuclear capabilities, empowering each contestant to destroy the other.

The behaviour of the American Government and, above all, of the U.S. President shows that throughout the crisis he was assessing the power relationship, and the corresponding options for American policy, far more realistically than many Congressmen, generals and intelligence agents. As he said to a group of Brazilian students in the White House on the eve of the crisis: "In nuclear war, there would be no victors."

There is no doubt that this more realistic appreciation of American nuclear war options was assisted by some outstanding successes of Soviet military technology in the preceding period, including the production of the orbital missile which neutralized the American air-defence system even before it could be completed.

Western Source Material

Bourgeois data about the world balance of power, which we shall be quoting in the following pages, can hardly reveal to us the actual state of affairs. They are probably not even the figures that American strategists themselves use in planning for a possible "hot war". All the same, they throw light on many aspects of U.S. and NATO military policy. For these are the figures the West uses in the "cold war", and the official strategic ideas of the U.S. are based upon them. Moreover, they are clearly figures which, as regards the forces of the imperialist blocs at least, border upon the true values. The policy of deterrence certainly exacts its tribute in this connection. . . .

McNamara's assertions about the general military superiority of America and about the Soviets "losing" the quantitative race are extremely serious. If they were true, they might have far-reaching . . . effects. But a closer look will show that they are wishful thoughts designed for the mass consumer . . . The one-sidedness of his statements will be apparent if we take as our yardstick figures given by Western sources, and pretty heavily adjusted already in favour of the West. . . Even a cursory glance at the table (compiled from A. Buchan, NATO in the 1960's and ISS, The Military Balance, 1964-65 and 1965-66) shows that, in quoting an American superiority of 3 or 4 to 1 in strategic offensive missiles and 5 or 6 to 1 in strategic aircraft, McNamara was chastely concealing more general considerations which ensue from the strategic positions of the potential foes and which, taken together, reveal a very different ratio of military strength in the chief means of combat. Considering the geostrategic disposition of the capitalist alliances, whose extensive territories lie near the frontiers of the socialist camp, account must be taken not only of strategic, but also of operational, striking power. This gives a comparison far less favourable to the West. At the turn of 1965-66 the capitalist states had about 2,450 vehicles for strategic or operational attack, the socialist countries 2,590. Of this number, 590 Soviet ICBMs and strategic bombers are covering the largely American military system and territory of the U.S., totalling 9.4 million sq. km., while some 2,020 American strategic offensive vehicles are targeted on the territory of the socialist camp, nearly four times as extensive (35.1 million sq. km.). So we see that the intensity of fire-power is about the same. . .

McNamara's allegation that the USSR has lost the numbers race likewise fails to stand up. Here, too, the British ISS study can help us. Though in 1962-63 the West had 635 more strategic and operational NDVs, by 1965-66, the ratio has changed so far that the socialist countries have 137 more.

The Present Balance

Socio-economic and military technical developments in the first half of the 1960's reinforced the basic features of the equilibrium of military forces. But we should not fail to notice that in the last few years, the balance has been tilting in favour of imperialism. The main reasons for this are the economic troubles of the socialist countries, disputes inside the international working-class movement, the disparate policies of the Soviet Union and the Chinese People's Republic, evolution in many developing countries unfavourable for the socialist camp, a considerable strengthening of the military power of contemporary capitalism, American space research achievements and a number of other factors. The tilting of the balance extends the options for imperialist aggressive policies, as U.S. aggression against Viet Nam has shown par excellence.

Despite this, the power relationship in the world remains characterized by an equilibrium based on the indefeasible ability of both world super-powers to destroy each other in thermo-nuclear war...

Since the U.S. would not survive a nuclear second strike with Soviet weapons, American strategic writers distort the military balance, disparaging the Soviet forces and their capability. They try to paint a picture of overwhelming military superiority so as to strengthen the confidence of her allies in the U.S. and widen the field of manœuvre for American policy. But such tactics cannot change the real facts...

It would be unjust to McNamara to imagine that he was blind to the increasing strength of the USSR... He admits that ... it is the utter vulnerability of the U.S. in a nuclear war which is the main obstacle in the way of his own strategic conception.

That is why he regards the elimination of this gap in the American military system as the crucial strategic problem and is directing the rearmament effort of the U.S. towards the construction of a defence system against nuclear attack.

Ballistic Missile Defence

As early as the XXII Party Congress, Soviet Defence Minister Malinovsky said that the USSR had solved the problem of destroying missiles in flight.

The implementation of anti-missile programs now being considered or, in the USSR and U.S., actually being worked on, will undoubtedly have a far-reaching effect on the development of military power relationships in the world. The nature of these changes is at present a prime concern of strategic and political planners on both sides. Neither side is yet able to pronounce conclusively on the subject. But it is agreed that the development of anti-missile systems could lead to the reproduction of the equilibrium at a new, higher level. Parallel development, with neither side allowing the other to gain a decisive lead, is not impossible in view of the levelling out of science and technology; indeed it is very probable, as the results of the nuclear arms race to date imply.

In that case, the nature of the equilibrium would be radically different from that prevailing today. Creation of systems providing complete, or nearly complete, defence against aircraft, missile or orbital attack could lead to the reduction of losses to an acceptable level, and thence eliminate the chief risk inherent in today's balance, viz., the risk of mutual annihilation....(This) will probably increase the scope for the use of force, even in the highest parts of the spectrum of violence, which could enhance the instability of the military balance.

Integration and Disintegration

Post-war development as a whole has been marked by two contrary trends: integration and disintegration... While the first post-war decade saw a concentration of strength and the rise of two opposed camps with more or less unified strategies, since the mid-1950's we have seen a definite increase of tendencies towards disintegration.

The present work does not aim to examine the causes of these processes. It merely assumes that they were not the outcome solely of strategic needs or oscillating tensions. . . . It sees the prime causes of integration in the pressure exerted by evolutionary processes—economic, political, military and ideological—and in the improved awareness of common interests among the ruling classes. The causes of disintegration it sees in the surviving and, in recent years, reviving strength of nationalism, and in the effort to promote narrow national interests, an effort taking the form these days of a fight to exercise hegemony or to occupy a proper position within an integrating whole. It takes note also of the contentious character of the strategic situation, where the nature of war stresses the need for alliance cohesion. . . whereas the balance of nuclear capabilities between the super-powers creates an atomic umbrella beneath which the bonds of coalition are loosened and independent activities begin to flourish among the partners.

The Future

For the imperialists, force is an indispensable means for blocking, as they hope, evolutionary processes which are going against them. . . . Thus, they are forced to display initiatives in a field where their options are restricted. That is the hidden weakness of their position. The germs of their future political failures are already there.

Socialist countries, by contrast, have no interest in deciding disputes between states by force—neither by limited nor by general war. The reason is simple. Socialism does not need to have recourse to violence for revolutionary forces to develop in the world, for democratic and socialist transformations to take place. . . .

The power in the background of socialist foreign policy is essential for success in the fight to eliminate force from international relations generally. . . .

The focus of the struggle is shifting further and further to other domains—ideological, political and economic. . . .

At the same time, the accumulation of nuclear weapons and their proliferation among other countries is bringing the world close to general nuclear war.

In this situation, the only alternative to thermo-nuclear war is not an agreement about constraints on such a war, as some bourgeois military theorists propose, but peaceful co-existence, an agreement on the gradual limitation and finally the liquidation of military capabilities. But until power is replaced as the supreme arbiter of international relations by some more sensible and equally effective principle, general and complete disarmament will remain an issue for the distant future. Till then, power relationships will remain the basis of our foreign policy.▲

A CASE FOR BMD

William J. Coughlin
Technology Week, January 2, 1967.

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The following editorial summarizes the position of all those who are pressing the U.S. Administration to adopt a "high posture" in every form of weapon.

The New Year brings with it two major and continuing problems for the Administration in general and Secretary of Defense McNamara in particular. These are the frustrating, perplexing war in South-East Asia and the decision on deployment of an anti-ballistic missile system.

Certainly, the Viet Nam war is one of the most unusual in which this nation has ever engaged. What would one have said during World War II if the Nazis had invited Mr. Harrison Salisbury of The New York Times to Berlin to report on the civilian deaths and destruction wrought by Allied bombing? The British hanged Lord Haw-Haw for providing just such reports by radio. It then was called enemy propaganda.

But Mr. Salisbury is an experienced, honest reporter and undoubtedly is reporting the facts as he sees them. That these facts are, without question, of aid and comfort to the enemy is an uncomfortable situation. The Washington Post put its finger precisely on the dilemma when it noted that North Viet Nam was admitting Western newsmen to Hanoi in "an evident attempt to undermine the Johnson Administration's claims that its policy is to avoid bombing civilians".

It is to the point to ask why it is that Hanoi is able to carry out such a policy with evident success. The fact is that the Administration and Mr. McNamara have created the credibility gap which makes this possible. It also is about time that the use of the polite phrase "credibility gap" gave way to the blunter description of just what has been going on. The Administration has been lying. These lies have created the crisis of confidence which has made Hanoi's latest ploy possible.

There is no reason whatever that the Department of Defense should have attempted to deny that North Viet Namese civilians were and are being killed and that civilian areas have been destroyed. This is war. U.S. pilots are being shot at by every conceivable weapon in North Viet Nam from surface-to-air missiles (SAM) to rifles in the hands of bartenders and waitresses. The flak over the North is the densest concentration of anti-aircraft fire ever faced by American pilots. Enemy fighters also are present.

Anyone at all familiar with combat knows that under these conditions every bomb or missile released is not going to be smack on the military target for which it was intended. Many are going to be dropped short, long or to the side. Many will be jettisoned as a fighter jinks to escape ground fire or enemy fighters. These inevitably will fall into civilian areas.

If the Pentagon had had the good sense to explain all this bluntly when the question first came up, along with the valid statement that the intended targets themselves are indeed only military, then the stories filed from Hanoi by Mr. Salisbury and other Western newsmen would be of little import—and indeed it is doubtful that any U.S. correspondents would have been admitted to the North.

As former President Eisenhower put it: "Is there any place in the world where there are not civilians? I know U.S. operations are aimed exclusively at military targets, but unfortunately there are some civilians around these targets."

But, once again disdaining the unpleasantness of truth in favour of the temporary comfort of lies, the Pentagon has suffered the fate of many liars—to be proven one.

Imagine, if you will, what the outcome of this policy does to the morale of U.S. pilots daily facing death in the vicious skies of North Viet Nam. Not only are they prohibited from going after many of the targets which threaten them, but now they can read reliable on-the-scene reports about the women and children they kill and maim. It is all too easy to blame The New York Times. But the years of lying to the press and public which have made this situation possible must not be ignored.

Whatever the sensitivities of the President and the Secretary of Defense, no distortion can obscure the fact that war is a messy, unpleasant business in which people, civilians as well as soldiers, are killed on both sides. The thing to do with a war is to get it over as fast as possible.

The same unwillingness to face facts appears in the vacillation about deployment of an anti-ballistic missile system. A Presidentially inspired panel on disarmament recommended a year ago a three-year moratorium on ABM deployment. Mr. McNamara appeared all too willing to go along with such recommendations.

We warned then that the Administration was deceiving itself into unilateral non-armament. Now, Mr.

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THE BRINK OF ANOTHER ARMS RACE

Roswell L. Gilpatric
The New York Times Magazine, January 15, 1967.

Mr. Gilpatric was Mr. McNamara's principal colleague in the U.S. Defence Department from 1961 to 1964. He expresses here the deep concern that most thoughtful Americans feel about the political implications of BMD.

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For many people, the idea of an "arms race" acquired its sinister connotation some 20 years ago with the beginning of the nuclear-weapons age. Yet in fact rivalry in arms, even in its earlier and simpler manifestations, has always been a bane of mankind. Whenever two nations have found themselves in competition to develop, produce and deploy new arms, the results have been to divert national energy, resources and time from peaceful uses, to exacerbate relations between those nations in other fields by engendering fear and distrust, and, above all, to provide the ingredients of easily ignited conflict.

Notwithstanding the almost universal desire to contain competitive armament struggles, our generation has never been free of them. Since World War II, the United States has gone through two cycles of competition with the Soviet Union in strategic armaments, and the signs are multiplying that we may be on the brink of engaging in still another arms race.

The first step-up in U.S. armaments after World War II grew out of Soviet actions and attitudes during the Berlin blockade of 1948-49 and the general intransigence of the Stalin regime on all international-security issues. When it became evident that the United States would have to provide itself with a strategic deterrent against Soviet aggressiveness, a decision was taken in the early 1950's to develop and produce a post-war generation of medium- and long-range jet bombers, first the subsonic B-47s and B-52s and later the supersonic B-58s. These manned-bomber programs were paralleled by other major technological advances, such as the development of more compact nuclear weapons through improvement in the yield-to-weight ratio of atomic warheads, and also by the production of jet tankers and the introduction of air-refuelling techniques to make it possible for our bomber fleets to reach the heartland of Russia.

The Soviets reacted in two ways. First, they developed their own fleet of medium- and long-range bombers, the so-called Bears and Bisons; second, they installed elaborate defensive systems consisting of wide belts of anti-aircraft cannon and missile emplacements supplemented by large fleets of interceptor aircraft.

These moves, in turn, led to extensive U.S. countermeasures, including the establishment of a far-flung radar network, known as the Distant Early Warning Line, whose outer perimeter extended from Alaska across the northern reaches of Canada to Greenland. Picket ships and plane-borne radar extended the bomber-warning systems along both the East and West Coasts. The U.S. also set up, under joint command with Canada, numerous air-defence centres consisting of fighter aircraft and anti-bomber surface-to-air missiles. Finally, to tie together all of the elements in this vast complex for the defence of North America, there was installed during the mid-1950's what was called the Semi-Automatic Ground Environment (SAGE) system.

All these offensive and defensive measures cost the U.S. many billions of dollars before much of the equipment involved was rendered obsolete by the advancing state of the military art.

From the start of the first post-World War II arms race, fundamental differences became apparent in the Soviet and U.S. responses to each other's strategic weapons programs. The U.S. sought to emphasize and to invest more of its resources in offensive capabilities, whereas the Soviets have always stressed defensive measures. In consequence, as the Russians built up stronger defences, the U.S. added to the numbers of its strategic forces and provided them with the capacity to penetrate Soviet defences. At the same time, we learned that beyond a certain level of defence, the cost advantage lies increasingly with offence.

Next Stage

The next lap in the arms race, beginning in the late Fifties and continuing into the early Sixties, was characterized chiefly by a partial shift from manned bombers to ballistic missiles, in both offensive and defensive roles, and by improved Intelligence through satellite-based reconnaissance about what the other power was up to. After what at first appeared to be, but never in fact materialized as, an early Soviet lead—the so-called "missile gap" of 1950 and 1960—the U.S. forged ahead in both the quantity and the quality of its intercontinental ballistic missiles (ICBMs).

Quickly on the heels of the first-generation, liquid-fuelled Atlas and Titan missiles, launched from "soft"—that is, vulnerable, land-based sites, came the Minuteman and Polaris families of ICBMs, solid-fuelled and fired either from "hardened"—protected, underground silos or underwater from submarines. With a force destined soon to comprise 1,000 Minuteman and 656 Polaris missiles, U.S. ICBMs have consistently outnumbered the Soviet missile force by a ratio of 3 or 4 to 1. Moreover, for some time, Soviet missiles were of less advanced types, being liquid-fuelled and deployed in soft or semi-protected sites and hence vulnerable to attack.

During this same period of the early 1960's, both U.S. and Soviet defences against bomber attacks were strengthened by the development and installation of successively improved models of surface-to-air missiles, of which, characteristically, the Soviets deployed by far the greatest number. To cope with tougher Soviet defences, U.S. bombers were modified to carry air-launched missiles in addition to gravity bombs and were equipped with electronic counter-measures to confuse Russian radar.

Both sides began developing anti-ballistic missile (ABM) systems, but it was only towards the end of 1966 that our Government acknowledged publicly that the Soviets had moved from the development stage to the quantity production and deployment of ABMs. In contrast, the U.S. has kept its ABM effort at the engineering design and development level and continued to place its principal reliance on the capacity of its strategic-weapons-delivery systems, whether bombers or missiles, to penetrate any type of Soviet defence, no matter how sophisticated.

After the Russians had been stood down during the Cuban missile crisis of 1962 and had reached an accord with the U.S. for a partial test-ban treaty in 1963, it appeared that they might accept the then existing military equation with the U.S. and not challenge us to another round in the strategic arms race.

For a period after the present Soviet leadership headed by Brezhnev and Kosygin took over from Khrushchev, it seemd to be Soviet policy to seek a détente with the U.S. Our Government therefore felt safe in levelling off its strategic forces at least until the time—not expected before 1975-80—when the Chinese Communists might develop their own nuclear weapons to the point of being able to threaten the continental United States.

As 1966 drew to a close, however, the American people were told that the Soviets not only were proceding with a comprehensive installation of ABMs, but in addition were setting out to build a larger force of solid-fuelled and invulnerably sited ballistic missiles. Such a build-up might, it was indicated, reach a point, beginning in 1968, where the U.S. strategic force of some 1,650 Minuteman and Polaris missiles would no longer enjoy its present overwhelming margin of superiority.

It thus became apparent that, in determining how to respond to these new developments, the U.S. is once again facing the possibility of a stepped-up arms race with the Soviet Union of even more critical and dangerous proportions than the two previous cycles.

Hard Choices

As he reviews the coming year's military proposals and budgets, President Johnson is therefore confronted with some hard choices regarding new weapons systems. Among them are the following:

1. Should the U.S. now produce and deploy, either on a full or limited scale, an anti-ballistic missile system? The current version is known as the Nike-X (consisting of two nuclear-tipped interceptor missiles, one short-range called Sprint and the other extended-range, the improved Zeus), supplemented with large numbers of new high-performance interceptor aircraft, the F-12, and an extensive Civil Defence program for providing on a nation-wide scale fallout shelter protection.
2. Or should the U.S. instead rely for the maintenance of its "second-strike" strategic deterrent on a new generation of ICBMs consisting of Minuteman III and Poseidon missiles—together referred to as Improved Capability Missiles (ICMs)—with the capacity to penetrate or saturate the new Soviet missile defences?
3. Should the U.S., in addition to procuring the new ICMs, equip its Air Force with quantities of an Advanced Manned Strategic Aircraft (AMSA) to take over the bomber role from the aging B-52 fleet and ultimately from the new supersonic jet bomber, the B-III, that will become operational a few years hence?

A go-ahead decision on the first, or the first and third, of these proposals will signalize a U.S. determination to do the Soviet Union one better in a new struggle for world power through force of arms and to base its relations with the Soviets more on a philosophy of conflict than on one of accommodation. Let us first consider the various military implications of such a choice.

Military Implications

Defence Secretary McNamara states that the currently planned U.S. offensive force of missiles and bombers was specifically designed to hedge against several different contingencies, including the possibilities, "first, that a Soviet ballistic-missile defence might be greater than expected by the intelligence estimates; and, second, that the Soviets might embark upon any one of several possible offensive build-ups, including variations in their target doctrine, variations in the

technological sophistication of their weapons systems, and variations in the speed of deployment of those systems".

In thus taking into account possible Soviet threats over and beyond those projected in the latest national intelligence estimates, secretary McNamara explains that "we have done so because an assured destruction capability, a capability to survive the first strike and survive with sufficient power to destroy the attacker, is the vital first objective which must be met in full regardless of the cost under all foreseeable circumstances and regardless of any difficulties involved".

His position is that, with the development of Minuteman III, the accelerated development of the Poseidon missile and moving ahead on new penetration aids to ensure our weapons getting through any defences the Soviets may put in place, the U.S. has in effect anticipated and ensured against the latest moves by the Soviet Union. Notwithstanding a Russian ABM system and more and better Soviet ICBMs, he concludes that the U.S. strategic forces will continue to maintain their present power to survive a Soviet first strike with sufficient capability to destroy the attacker, which is the foundation of the deterrent power upon which our national security depends.

The conclusions of the Secretary of Defence are being severely questioned in a number of quarters. In the first place, there are indications that most of the professional military organization, from the Joint Chiefs of Staff on down, believes that the United States should go ahead with both production and deployment of an ABM system and also with a new generation of manned bombers as well as the new ICMs.

This military judgment will find strong support in the Congress, especially among the influential leaders of the Armed Forces committees, and will be backed by substantial sectors of public opinion, particularly in the South and on the Republican right. There is also likely to be considerable pressure from segments of the defence industry, backed by the communities that would benefit from increased armament production, for this nation to embark on a new round of strategic weapons building. It is possible that the Secretary of Defence's position may not enjoy undivided support even within the Johnson Administration.

Political and Economic Issues

But apart from the military implications of these new weapons choices, there are a number of political and economic issues which, so far as the public knows, may not have been fully considered.

If the U.S. decides to install ABMs to protect its population, should such systems also be placed in Europe, and if so, will not the countries on the other side of the Iron Curtain respond in kind? In that event, will the ABMs be furnished to our allies by ourselves, and to the bloc countries by the Soviets, and at whose cost?

Will our action to go ahead with an ABM deployment play into the hands of the Communist Chinese efforts to disrupt U.S.-USSR relations? How far will we and the Soviets go beyond ABMs in building active defences when the costs involved are measured by tens of billions of dollars, with enormous strategic implications and a long-lasting political impact?

The effects would be felt especially in Europe but also, as Communist Chinese nuclear capabilities develop, in India, Japan and other countries on the periphery of the Chinese mainland.

Inherent Dangers

A new arms race will produce other casualties. Besides the hoped-for nuclear weapons non-proliferation treaty, towards which the Soviets and the U.S. have of late been making progress, there have long been under discussion between Russian and American disarmament negotiators a series of other arms-control measures. These include the extension of the partial test ban to include underground testing, the establishment of nuclear-free zones, a cut-off in the production of nuclear materials and a freeze on—or possibly a reduction in—strategic delivery vehicles.

In the event of a new arms race, all this effort, and the partial foundations thereby constructed for further disarmament moves, will go by the board, and whatever headway has been built up, both at the UN and in the Eighteen Nation Disarmament Conference at Geneva, will be lost. Indeed, even if the Soviet Union and the U.S. should in their own interests come to terms on a non-proliferation treaty, it is hardly to be expected that the major nuclear have-not nations, such as India and Japan, will sign away their rights to join the nuclear club at a time when its two charter members, Russia and the U.S., are building up rather than cutting down their nuclear arsenals.

Still another danger inherent in a renewed arms race lies in its short-term effect in Europe. For the U.S. to press ahead with a new strategic armament program would further weaken the NATO alliance, whose last meeting in Paris stressed the twin themes of détente with the Soviet Union and the "diminished threat of military aggression" rather than the need for greater defensive measures. The alliance, already under strain because of our allies' concern over the heavy U.S. involvement in the Viet Nam war, would suffer another blow if U.S.-USSR relations took a turn for the worse.

Favourable Aspects

In approaching its decisions, the Administration will presumably take into account positive as well as negative emanations from the Soviet Union. Among the

favourable developments in U.S.-USSR relations are the recently announced agreements for commercial air services between the two countries and for banning weapons of mass destruction from outer space.

Apart from their intrinsic significance, these developments indicate that the Soviet Union has not considered itself entirely inhibited from reaching agreements with the U.S. despite its predicament over Viet Nam. This condition cannot, however, be expected to last if the Soviets feel themselves put in the position of countenancing U.S. bombing raids in the Hanoi area which produce civilian casualties. Undoubtedly, the present state of U.S.-USSR relations would rapidly worsen if a significant intensification occurred in the scale of our air attacks against North Viet Nam.

At worst, Soviet intentions regarding a renewed arms race should be treated as ambivalent and unclear rather than entirely negative. Their ABM deployment can be accounted for otherwise than as indicating a desire to alter the strategic power balance. It not only is in keeping with the ultimate in defensive postures but may also have resulted from military pressures within the Soviet regime rather than from a far-reaching decision to abandon the détente objective.

The latest increase in the Soviet defence budget is likewise equivocal. The announced rate of increase, 8.2 per cent, is not in itself of menacing proportions, although in announcing the rise in defense spending the Soviet authorities spoke of "recently sharpened international tensions" and the increased "danger of a new world war" because of "aggressive acts" of U.S. "imperialists".

Aside from these vital questions affecting international relations, the effect on our economy of a U.S. decision to proceed with ABM deployment and new strategic weapons would be tremendous. Depending on the timing and extent of these programs, the U.S. defence budget would be inflated by at least $5 billion to $6 billion a year, with the probable result that the present level of military expenditure, which will stay in the $70-billion to $75-billion-a-year range during the period of the Viet Nam war, would thereafter remain at that order of magnitude instead of receding to the pre-Viet Nam budget level of around $50 billion a year.

The effect of this Federal spending and diversion of national resources might well be to reduce or delay further funding of U.S. space and supersonic transport programs as well as to forestall further financing of the Great Society programs such as anti-poverty projects, demonstration cities and the like.

It is not, however, the economic cost of a decision to deploy ABMs as well as to add to the level of our bomber and missile forces that is the most disturbing aspect of a renewed arms race. With the U.S. gross national product estimated to rise to $790 billion during 1967 and to grow at four per cent a year thereafter, projecting defence expenditure at nine per cent of GNP (compared to 15 per cent of GNP during the Korean War) would produce a defence budget of over $70 billion a year, which should not prove an intolerable burden on our economy. The price tag of another arms race, while staggering, is not in itself an argument against it.

What the United States faces is a major watershed in national security policy. Should it re-engage in an armament contest with the Soviet Union, or should it strive for more progress towards arms control and the substitution of political, economic and sociological measures for military force as means for ensuring world peace?

In these terms, the question comes down to how the United States will exercise its acknowledged strength and world leadership—whether towards heightening the tension that will come from renewed emphasis on armaments and accelerated advances in weapons technology or in the direction of arms limitation and the solution of world problems through peaceful means.

Should the decision be reached during 1967 to proceed with any of the major new weapons systems now being pressed upon the President by some of his advisers, their opposite numbers in the USSR would obviously be in a stronger position to insist on corresponding increases in Russian weapons projects.

The reaction in political terms would be even more dangerous, jeopardizing not only the détente so ardently sought after by our allies but also the fragile gains achieved through Soviet restraint in recent years in such troubled areas of the world as Africa, Latin America and on the India-Pakistan sub-continent.

The decisions which the President now faces are made doubly difficult by the national mood of frustration over the way the war is going in Viet Nam. All-too-ready distrust of the Soviets' intentions, coupled with anger at their growing aid to Viet Nam, would prompt many of our people to view with suspicion or antagonism a national policy of forbearance in dealing with the Soviet Union. For others, an effort to moderate the competition in arms would be regarded as a sign of weakness and a peril to our national security.

Yet President Johnson has recognized, as did President Kennedy, that if a third world war is to be avoided the United States, as the most advanced of the super-powers, must take the lead in demonstrating a willingness to practice self-discipline both in the use of force and in providing itself with the power to apply force. The present situation puts to a critical test our national determination not to be swerved from the rightness and sanity of that course.▲

Extracted from Letters to the Editor of the Washington Post, May 16, 1966

"I note with interest that you have devoted several editorials to issues concerning Nike-X and ballistic missile defense in general. I believe that public understanding of this topic is quite important and that therefore statements of fact should be presented as clearly and correctly as possible.

"In your editorial of May 4, 'Anti-Missile Fallout,' you commented on the coupling between fallout shelters and a Nike-X missile defense system. The reason that Mr. McNamara has made this point is that even with a perfect terminal defense but no fallout shelters it is possible for the enemy to target the United States out of range of the defended cities and rely on fallout from these weapons to produce fatalities. Lethal fallout is caused by nuclear detonations on or very close to the ground in which large masses of dirt particles are contaminated by the fireball, sucked up into the atmosphere and later deposited by winds over hundreds of square miles.

"Your editorial implied that the necessary coupling of Nike-X with fallout shelters is due to fallout from our own nuclear tipped interceptor weapons. This is not the case, since even if hundreds of short range Sprint missiles were exploded above cities to defend them the resulting fallout would not kill or injure the population below. It would be far less, in fact, than that created by the nuclear test activities of both the Soviet Union and the U.S. a few years ago before the test ban treaty which bars atmospheric tests. The same statement is equally true for the long range Zeus interceptor missile.

"There are many legitimate arguments, pro and con, concerning ballistic missile defense. It is a subject of the highest importance to the country; it will undoubtedly be increasingly debated, and it is a necessity that public opinion be well informed so that conclusions can be drawn on the facts and real issues." ▲

DANIEL J. FINK
Deputy Director, Strategic and Space Systems, Department of Defense
Washington

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B. Number of Fatalities in an All-Out Strategic Exchange (in Millions)

(Assumes Soviet reaction to U.S. ABM deployment)

U.S. programs	Soviets strike first, U.S. retaliates		U.S. strikes first, Soviets retaliate	
	U.S. fatalities	Soviet fatalities	U.S. fatalities	Soviet fatalities
Approved (no response)	120	120+	100	70
Posture A	120	120+	90	70
Posture B	120	120+	90	70

Defence against the Red Chinese Nuclear Threat

With regard to the Red Chinese nuclear threat, an austere ABM defence might offer a high degree of protection to the nation against a missile attack, at least through the 1970's. The total investment cost of such a program might amount to $3.5 billion, including the cost of the nuclear warheads.

The effectiveness of this deployment in reducing U.S. fatalities from a Red Chinese attack in the 1970's is shown below:

U.S. fatalities (in millions)	Chinese strike first (Operational inventory)	
	X missiles	3X missiles
Without ABM	5	10
With ABM	0+	1

This austere defence could probably preclude damage in the 1970's almost entirely. As the Chinese force grows to the level it might achieve by 1980-85, additions and improvements might be required, but relatively modest additional outlays could probably limit the Chinese damage potential to low levels well beyond 1985.

It is not clear that we need an ABM defence against China. In any event, the lead time for deployment of a significant Chinese offensive force is longer than that required for U.S. ABM deployment; therefore, the decision for the latter need not be made now.

In the light of the foregoing analysis, we propose:

To pursue with undiminished vigour the development, test, and evaluation of the Nike-X system (for which purpose a total of about $440 million has been included in the FY 1968 Budget), but to take no action now to deploy the system.

To initiate negotiations with the Soviet Union designed, through formal or informal agreement, to limit the deployment of anti-ballistic missile systems.

To reconsider the deployment decision in the event these discussions prove unsuccessful; approximately $375 million has been included in the FY 1968 Budget to provide for such actions as may be required at that time—for example, the production of Nike-X for the defence of our offensive weapon systems.▲

EAST, WEST WORRY ABOUT 'ESCALATED DEFENCE' MISSILES:

by
Peter Worthington

The following article is reprinted with the permission of the Toronto Telegram News Service.

Less than 10 years ago a great topic of debate was whether there was any point in trying to protect North America against the threat of manned bombers.

Today that threat has faded. Now the debate has been raised a notch to whether there is any point trying to set up a defense system against missiles.

There seems no limit to the extent of the armament race, defensive or offensive.

Disturbing as it may seem the two great powers, USA and USSR, seem to be moving towards escalating the nuclear "balance of terror" to an even higher plateau.

The ball is presently in the U.S. court and although no decision has been made yet, there's an ominous aura of inevitability surrounding the whole question.

U.S. intelligence claims (supported by Soviet admissions) the Russians are already building an anti-ballistics missile system (ABM) around Moscow and Leningrad.

Defense Secretary Robert McNamara says the U.S. offensive missile might is sufficiently strong to crack any Soviet defense. But his generals don't agree it seems.

Gen. Earle Wheeler, Chairman of the Joint Chiefs of Staff, says his boss is wrong and the U.S. must match the Soviet ABM system or else the West will be vulnerable.

He isn't at all sure American missiles can penetrate any Soviet defense system. Perhaps more pertinent is that he fears the Soviets might think they have an advantage and may be tempted to attack first.

The question of who is right, McNamara or Wheeler, is almost incidental.

They simply represent the visible tip of the iceberg. Beneath the surface the electronics and missile-manufacturers are undoubtedly tempted to lobby and exert pressure to get the costly ABM network underway. Counter-pressures are also at work.

The cost of such a system has been estimated at a staggering $1,000,000,000 per city. Ironically, it would likely be obsolete on completion.

Soviet Premier Kosygin has so far resisted U.S. pressure to call off the "escalated defense", and won't sign a slow-down treaty. Kosygin claims that his defensive missiles pose no threat to American territory.

So what is going on?

There are some basics that, if the Americans are taking into consideration, they certainly aren't talking about.

In an ABM race the Americans cannot win.

Presumably, if they decided to proceed with missile defenses it would become a sort of extended NORAD Bomarc network which, in retrospect, seems to have been a bit of a sucker deal against a threat of manned bombers that the Soviets didn't have to the extent that was once believed.

We were victims of our own, and perhaps, Soviet propaganda.

A missile defense network would impose the necessity of a large shelter program—against our own missiles' fallout as well as the enemy.

It sounds a bit ridiculous (to anyone except a Pentagon hawk) but defensive nuclear weapons might be almost as lethal against unprotected citizenry as would the enemy variety!

Something that isn't widely known—but which Western intelligence is well aware of—is that Moscow possesses the largest air raid shelter on earth.

It's a semi-secret in Moscow which people are reluctant to discuss, but I know of several people who claim to have been indirectly involved in its construction.

This is a huge shelter under Red Square and the Kremlin which supposedly will house "thousands"—not citizens, but the "brains of the nation" which, in Soviet terms, means the top Party hierarchy and their families.

This shelter is said to be equipped with a hospital, food, water and clothing supplies to last several years if Moscow is ever subjected to a nuclear attack.

The Soviet survivors would presumably emerge in a few years to lead what is left of the country back to a position of dominance in what is left of the world.

Accept this thesis or reject it, but the shelter exists. It's been in the works for years—maybe since Stalin's time—and it is said to be now ready.

The Soviet Union doesn't have the population concentrations or built-up areas that the U.S. does. It has the wastes of Siberia (population 8,000,000) which might escape excessive contamination.

An ABM defense race between East and West would result in mammoth U.S. expenditures compared to the relatively small amounts the Soviets would spend.

The balance of terror—offensively—is still weighted on the American side. The U.S. has more than 1,000 operational ICBMs and nearly 700 Polaris missiles on

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RISKY AND COSTLY

This extract is from an editorial which appeared in the Globe and Mail, Wednesday, April 5, 1967, and is reprinted with kind permission of the Editor.

If the United States and the Soviet Union start an all-out race to develop and deploy rival ABM systems, they will increase the danger of nuclear war by upsetting the present balance of terror. For if either came to believe it had stolen a lead—and that its cities were invulnerable to offensive missiles—it might be tempted to adopt more reckless foreign policies, or even to launch a surprise "first strike" which the present balance rules out.

Every ally of Washington and Moscow has reason to be concerned by this threat, including the other members of the nuclear planning group: Canada, Britain, West Germany, Italy, Turkey and the Netherlands. Canada has a special stake in the outcome: since our most populous areas would be vulnerable to the fallout from enemy missiles exploded in space by any U.S. anti-missile missiles, we would probably at least have to launch our own costly program of building shelters.

There will also be a sense of urgency to the discussions in Washington. With the Soviet Union already starting to deploy at least one—and possibly two—ABM systems, influential Congressmen and the Joint Chiefs of Staff are urging President Lyndon Johnson to order full-scale development of the still-experimental Nike X defensive missiles.

With considerable courage, Mr. McNamara has resisted these pressures, arguing that no ABM system could provide certain protection against offensive missiles armed with devices to disrupt radar and decoys to confuse the defensive missiles. Another drawback is the cost: estimates for a full Nike X program range from $30-billion to $50-billion over the next decade —a burden which would seriously strain even the U.S. economy.

Above all, Mr. McNamara holds that the development of an ABM system and a parallel civilian shelter program would convince the hawks in the Kremlin that Washington was actively preparing for nuclear war by denying them the U.S. cities that they currently hold as hostages. In this sense, building an ABM system would be an offensive (rather than defensive) move. It would therefore be provocative, and would lead to further escalation in the nuclear arms race. ▲

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McNamara has admitted that such a policy was a failure, that the Soviet Union indeed is starting to deploy an anti-ballistic missile system. Yet, once again it is reported that an effort will be made to approach the Russians for assurances that no such systems will be emplaced around Soviet cities and military targets.

How often must we get burned? Talk is fine, but as an accompaniment to action—not a replacement for it. Mr. McNamara's effort, as a pseudo-Secretary of State as well as Defense, to convince the Russians that they should accept a position of inferiority in armament as a step to world stability has been a delusion from the beginning. The worst effect of such delusion has been the weakening of our own military establishment as we unilaterally abandoned promising systems.

It is time for this nation to face some of the unpleasant facts about its position as a world power. So far, it has preferred lies and delusions.▲

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submarines. The USSR is believed to have only 350 ICBMs and 150 submarine missiles.

Even though the Kremlin has its hawks and Stalinist extremists, only the obsessed believe that the USSR wants war.

But only the naive should believe that the Kremlin wouldn't like to see the U.S. waste some $50,000-000,000 on something that probably won't do the job anyway.

Regardless of what the Russians do there seems little sane way to justify an anti-missile network. ▲

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